AF/2700

TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. N01280US

OIPE JC177 MAR 3 0 2004 PATENT & TRADEMARK OFFICE

In Re Application Of:
Shunichi Hosoyamada

Serial No.	Filing Date	Examiner	Group Art Unit
09/925,601	**August 10, 2001**	**Dinh, Duc Q.**	**2674**

Invention:
METHOD AND CIRCUIT FOR DRIVING LIQUID CRYSTAL DISPLAY AND IMAGE DISPLAY DEVICE

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Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on **January 30, 2004**

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Frederick Cooperrider
Signature

Dated: **March 30, 2004**

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15/ Appeal 4-5-04 NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Shunichi Hosoyamada

Serial No.: 09/925,601 Group Art Unit: 2674

Filed: August 10, 2001 Examiner: Dinh, Duc Q.

For: METHOD AND CIRCUIT FOR DRIVING LIQUID CRYSTAL DISPLAY AND IMAGE DISPLAY DEVICE

APPELLANT'S BRIEF ON APPEAL

Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

Appellant respectfully appeals the rejection of claims 1-54 in the Office Action dated August 27, 2003. A Notice of Appeal was timely filed on January 30, 2004.

I. REAL PARTY IN INTEREST

The real party in interest is NEC LCD Technologies, Ltd., assignee of 100% interest of the above-referenced patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representative or Assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-54, all the claims pending in the application, are set forth fully in the attached Appendix.

Claims 53 and 54 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly not being described in the specification in such a way as to enable one skilled in the art to recognize that Appellant had possession of the claimed invention.

Claims 1-52 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Appellant's Admitted Prior Art (AAPA), further in view of US Patent 5,689,283 to Wolfs et al. There is no prior art rejection for claims 53 and 54.

IV. STATEMENT OF AFTER-FINAL AMENDMENTS

A Request for Reconsideration Under 37 CFR §1.116 was filed on December 29, 2003.

V. SUMMARY OF THE INVENTION

As described and claimed, for example by claim 1, the present invention addresses a method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to the plurality of scanning electrodes and by sequentially feeding data signals to the plurality of signal electrodes. A polarity of each of the data signals is <u>reversed for every 2n</u> (n is a natural number) pieces of the scanning electrodes and for each signal electrode. Thus, for example, data signals are <u>reversed for every other signal electrode</u> in the liquid crystal display. The data signals having the reversed polarity are sequentially fed to each of the corresponding signal electrodes.

This concurrent polarity reversal in <u>both</u> the horizontal and vertical dimensions cause the flicker to occur at a slant, rather than vertically <u>or</u> horizontally, as in the prior art of

record. The slant flicker is less noticeable to the observer. Therefore, flicker is reduced. No prior art reference teaches or suggests providing a slanted flicker or even that flicker would be less noticeable if slanted.

The advantages provided by the claimed combination of the present invention include the following: reduction of cost; reduction of monochromatic flicker and flicker for display of images with non-white colors; and capability to minimize flicker over the entire screen, thereby preventing image persistence and allowing application to high-definition displays and larger displays.

Independent claims 7, 13, 19, 25, 31, 37, 43, 49, 50, 51, 52, 53, and 54 either claim other aspects of the present invention, a different scope of the present invention, or a different wording to describe one or more aspects of the present invention.

VI. ISSUES PRESENTED FOR REVIEW

Appellant presents three issues for review by the Board of Patent Appeals and Interferences:

ISSUE 1: The Written Description Rejection

Whether the rejection under 35 U.S.C. § 112, first paragraph, for claims 53 and 54, is proper, given the clear indication of slanted flicker in Figures 6A, 6B, 8A, and 8B due to periodic polarity reversals and the mathematical articulation in the specification, even though Appellant has described the invention in equivalent non-mathematical terminology in the claims, in order to reword a key aspect of the invention in a manner intended to assist the Examiner's understanding of the invention.

ISSUE 2: The Obviousness Issues - Proper Articulation of Modification, Motivation to Modify the Primary Reference, and Result Even if Modified

Whether the rejection under 35 U.S.C. § 103(a) for claims 1-52 provides a proper modification and a proper motivation to modify the primary reference AAPA, when the articulated motivation to modify is taken out of context and is not reasonably related to the articulated modification, when the primary reference already incorporates a feature to address flicker, when the prior art does not even identify the problem addressed by the present invention, when it is uncertain exactly what the rejection is "substituting", when the secondary reference seemingly would teach against making the urged modification, and when the resultant modification will arguably simply result in the problem originally addressed in the secondary reference, if not cause complete confusion in the display format of the AAPA, would change the principle of operation of the primary reference, and/or would disrupt or destroy the functioning of the flicker technique already taught in the primary reference.

ISSUE 3: Completeness of the Rejection

Whether the rejections under 35 U.S.C. § 103(a) for claims 1-52 meets the initial burden when the rejection fails to recognize and address the plain meaning of the language for each and all claim limitations therein.

VII. GROUPING OF THE CLAIMS

As supported by the following arguments, independent claims 1, 25, and 49 and dependent claims 2-6, 26-30 stand or fall together because of the commonality of the wording in the independent claims describing the scope of coverage as a generic concept.

Independent claim 7 and dependent claims 8-12 stand or fall together, because the scope of the independent claim specifically addresses the monochromatic aspect of the

present invention in combination with specific design details of the data signal as defined over four consecutive scanning periods.

Independent claim 13 and dependent claims 14-18 stand or fall together, because the independent claim wording is specifically directed to the display of shades of gray in combination with a polarity reversal scheme and specific scanning potential.

Independent claims 19 and 43 and dependent claims 20-24 and 44-48 stand or fall together, because the scope of the independent claim wording specifically addresses gray-scale color of monochromatic color display in combination with a specific waveform description.

Independent claim 31 and dependent claims 32-36 stand or fall together, because the scope of the independent claim is directed to the specific polarity reversal in combination with specific description of a waveform.

Independent claims 37 and 51 and dependent claims 38-42 stand or fall together, because the scope of the independent claim is directed to the specific polarity reversal in combination with a specific description of a waveform different from the description of claim 31.

Independent claims 50, 52, 53, and 54 each respectively stands or falls on its own, since each articulate a different scope of aspects of the present invention.

VIII. ARGUMENTS

ISSUE #1: THE WRITTEN DESCRIPTION REJECTION

A. THE EXAMINER'S POSITION ON THE WRITTEN DESCRIPTION ISSUE

The Examiner alleges that claims 53 and 54 fail the written description requirement. The Examiner states: "Although the specification does mention "specified intervals for row direction and column direction" (page 19, lines 6-9) and the method of reverse polarity of

data signals (page 20, lines 25-29, page 21, lines 6-29...). There is no support for cited limitations: "first uniform interval and second uniform interval, uniform reversal and concurrent uniform intervals (claim 53) first predetermined uniform interval, second predetermined uniform interval and a combination of uniform polarity reversals"."

Presumably, the Examiner is concerned with the following claim language from claims 53 and 54:

> 53. A method of reducing flicker on a liquid crystal display, said method comprising:
> reversing a polarity of first display signals related to a horizontal dimension in a <u>first uniform interval</u>; and
> reversing a polarity of second display signals related to a vertical dimension in a <u>second uniform interval</u>,
> wherein <u>concurrent uniform reversals</u> of polarity in both said horizontal dimension and said vertical dimension causes a flicker to be at an angle slanted relative to said horizontal dimension and said vertical dimension.
>
> 54. A liquid crystal display, comprising:
> a plurality of scanning electrodes placed at specified intervals in a row direction;
> a plurality of signal electrodes placed at specified intervals in a column direction; and
> a controller that reverses a polarity, in a <u>first predetermined uniform interval</u>, of display signals to said scanning electrodes and reverses a polarity, in a <u>second predetermined uniform interval</u>, of display signals to said signal electrodes,
> a <u>combination of uniform polarity reversals</u> in both said scanning electrodes and said signal electrodes causing a flicker in said liquid crystal display to be at a slanted orientation relative to said scanning electrodes and said signal electrodes.

B. APPELLANT'S POSITION ON THE INDEFINITENESS ISSUE

First, the Examiner's position is <u>flawed as a matter of law</u>.

Appellant speculates that the Examiner's actual concern is that identical wording is not present in the specification. However, <u>identical</u> wording is <u>not required</u>, as clearly stated in MPEP §1302.02:

> *"It should be noted, however, that exact terms need not be used* in haec verba *to satisfy the written description requirement of the first paragraph of 35 U.S.C. 112. [citations omitted] See also 37 CFR 1.121(e) which merely requires substantial correspondence between the language of the claims and the language of the specification."*

Appellant submits that the language of claims 53 and 54 does indeed "substantially correspond" to the description at lines 3-9 on page 23.

Secondly, the Examiner's position is flawed as a matter of fact.

Appellant submits that the supporting wording is actually found throughout the specification. For example, the exemplary scenario for a red monochromatic display is clearly described at lines 3-9 on page 23.

Appellant submits that, in this scenario, one of ordinary skill in the art would clearly recognize that both the horizontal and vertical dimensions have periodic polarity reversals and that this periodic reversal inherently causes a slanted flicker, as clearly described at lines 9-12 on the same page.

Therefore, Appellant requests that the rejection under 35 USC §112, first paragraph, be withdrawn.

C. THE EXAMINER'S POSITION ON THE OBVIOUSNESS ISSUE

The Examiner's position on the obviousness issue is represented in the prior art rejection in the Office Action dated August 27, 2003, and the Examiner's statements to the attachment to the Advisory Action dated January 14, 2004. The prior art rejection currently of record addresses only claims 1-52 and does not address claims 53 and 54.

The Examiner concedes that the Appellant's Admitted Prior Art shown in Figure 12 of the present Application fails to show "*... reversing a polarity of each of the data signals for every 2n piece[s] of the scanning electrodes and for every [~~the~~] signal electrode.*"

The rejection continues: "*Wolfs discloses a display device having a row selection*

circuit 13 that can reverse a polarity of the data signals for every 2 rows or n rows (double line inversion <e=2)(see Fig.3)."

The Examiner then alleges that "*[i]t would have been obvious for one of ordinary skill in the art at the time of the invention was made to substitute the selection of the circuit of Wolfs for the scanning electrode in the AAPA because it would provide a display device in which the stripe effect are reduce[d] considerably (col.1, lines 40-43).*"

Thus, it appears that, even though there is <u>no suggestion in the AAPA</u> (or in Wolfs) to make <u>any</u> substitutions, let alone "substitute the selection circuit for the scanning electrode[s]", the Examiner is understood as alleging that a "substitution" of some sort to the "scanning electrode" configuration in AAPA would result in the present invention, as defined by claims 1-52.

D. APPELLANT'S POSITION ON OBVIOUSNESS

<u>Independent Claims 1, 25, and 49</u>

First, the Examiner's position is <u>flawed as a matter of law</u>.

Appellant first submits that the rejection currently of record is erroneous by failing to define <u>precisely what "substitution" is to be made to the primary reference AAPA</u>. Indeed, Appellant remains baffled as to what the Examiner is attempting to modify in AAPA and, quite frankly, leaves it to the Board of Appeals to decipher on the record <u>exactly what modification is intended</u> by the rejection currently of record and <u>how such modification will provide the claimed invention</u>.

That is, Wolfs starts out with a problem of addressing horizontal strips that are visible because of <u>row polarity inversion</u>, as used in its prior art. The solution in Wolfs is based on recognizing that the horizontal stripes are caused by capacitive couplings between consecutive rows (e.g., see lines 53-55 of column 1). The <u>solution to the problem</u> is that of modifying the voltage levels "... at one side or at both sides at the transition of a group of

pixels to a subsequent row" (e.g., see lines 59-61 of column 1).

If the Examiner intends to modify AAPA by "substituting" (e.g., the term used in the rejection) the row polarity inversion of Wolfs in lieu of the polarity configurations shown in Figures 13A-14B of AAPA, then it is noted that, if the single row polarity inversion is imposed on these figures, one would arguably end up with total confusion in the display, since the pixel groups of Figures 13A/13B and of Figures 14A/14B are no longer grouped in the same polarity groupings. If double row inversion of Wolfs is imposed on these figures, it would seem to be clear that one simply ends up with the horizontal stripes of Wolfs in the case of Figures 13A/13B and will not at all result in a slanted flicker for Figures 14A/14B. Therefore, even if this modification, as best understood, is made to AAPA, the modification will not provide the result of the independent claims.

Therefore, until the rejection currently of record clearly defines what "substitution" is to be made and how such substitution provides the features of the claimed invention, Appellant submits that the rejection currently of record fails to meet the initial burden of a *prima facie* rejection under 35 USC §103(a).

However, for purpose of this Appeal, Appellant will attempt to more completely address the rejection currently of record, as best understood. Since the present invention addresses the problem in the AAPA in which noticable flicker occurs in the vertical columns because polarity reversal causes light/dark columns, Appellant speculates that the Examiner is intending to *superimpose* the row polarity reversal discussed in the background of Wolfs *on top of* the polarity pattern shown in AAPA Figures 13A/13B, rather than make some type of substitution, since a superposition would arguably convert the vertical light/dark columns into a slanted pattern.

Appellant also speculates that the Examiner is merely attempting to take the wording at lines 40-43 of column 1 of Wolfs out of context as justification to modify AAPA.

However, the proper context for the description (e.g., "... in which the stripe effect are reduced considerably") upon which the Examiner relies for a motivation very clearly

relates back to lines 34-37 of column 1, in which the stripe effect being addressed by Wolfs are in the horizontal rows of the prior art discussed therein, as clearly shown in Figure 3a and 3b.

It is noted that AAPA does *not* have the horizontal row striping problem that is being addressed in Wolfs, as can be clearly seen in Figures 13A-14B. Indeed, one of the problems addressed in AAPA by the present invention is due to a vertical light/dark flicker for monochrome color regions (e.g., Figures 15A/15B). It is also submitted that one of ordinary skill in the art would not be motivated to incorporate a known prior art problem (e.g., horizontal stripes), and that such combination would be clear evidence of impermissible hindsight.

Therefore, absent a clearly articulated modification and a clearly articulated motivation to modify AAPA, Appellant submits that the rejection currently of record fails to meet the initial burden of a proper rejection under 35 USC §103(a).

Moreover, simply using wording out of context violates a number of guidelines in the MPEP, as Appellant previously pointed out in the Amendments of record.

First, MPEP §2141.02 clearly states the following very basic evaluation guideline: "*In determining the differences between the prior art and the claims, the question under 35 U.S.C.103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious*" (emphasis in MPEP itself).

This guideline reflects the well established concept in patentability evaluation that a new invention may "merely" be a new and different combination of known elements.

Second, it is pointed out that MPEP §2143.01 clearly states a second guideline: "*The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination*" (emphasis in MPEP itself).

Along these lines, Judge Rader wrote in the recent Federal Circuit Court of Appeals holding in *Ruiz v. A.B. Chance Co.*, Federal Cir., No. 03-1333, January 29, 2004:

> *"In making the assessment of differences, section 103 specifically requires consideration of the claimed invention "as a whole." Inventions typically are new combinations of existing principles or features. Envtl. Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 698 (Fed. Cir. 1983) (noting that "virtually all [inventions] are combinations of old elements."). The "as a whole" instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result - often the very definition of invention."*

Although the holding in that case left undisturbed, under the "clear error" standard of review, the conclusion of the District Court that the prior art references were properly combinable, it specifically explained that it declined to reverse this conclusion because "... the two references address <u>precisely</u> the same problem ... " (emphasis by Appellant)

This aspect of the *Ruiz* holding, in which precisely the same problem is being addressed by both references, is <u>not</u> present in the AAPA and Wolfe. As explained beginning at line 8 on page 6, one problem addressed by AAPA is that a <u>monochrome</u> region has <u>vertical</u> stripes because, as recognized by Appellant, the amount of currents vary when polarity is reversed. The solution offered by the present invention is to reverse polarities in a particular pattern so that this <u>monochrome flicker occurs at a slant</u>, which is less noticable than flicker in the vertical dimension.

In contrast, the problem addressed in Wolfs is that, <u>in the environment in which polarity is reversed every row</u> (or multiple rows), "... stripes are usually visible <u>along the edge of the groups of rows</u>. In the case of double row inversion this becomes manifest in light rows alternating with dark ones." (lines 34-37 of column 1, emphasis by Appellant).

The solution offered in Wolfs is to <u>change the voltage level on a horizontal line</u>, relative to the prior art, thereby reducing the voltage difference between the adjacent

horizontal rows and reducing the visibility of the stripe.

It is further noted that Wolfs does not in any way suggest making the visible stripes slanted, rather than horizontal, or changing the horizontal stripes therein to correspond to the vertical flicker of AAPA.

Third, it is pointed out that MPEP §2143.01 clearly states a third guideline:

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious."

Appellant points out that AAPA <u>already incorporates a polarity reversal scheme to reduce flicker</u> and that the Examiner will change, if not totally destroy, that scheme by merely <u>superimposing another scheme</u>, such as shown in Wolfs, onto that of the AAPA. If a flicker control scheme <u>already</u> exists, there is clearly no need to modify it without an articulated rationale, thereby again clearly evidencing the use of impermissable hindsight reconstruction.

That is, as shown in Figures 13A/13B and described beginning at line 1 of page 4, the first AAPA technique has a delta reversing driving method oriented towards a delta pixel arrangement. As described at lines 1-3 of page 5, this scheme reduces the flicker for white colors.

If the technique in Wolfs is merely superimposed on this pattern, as the Examiner urges, this technique to reduce flicker for white colors will be either destroyed or clearly modified, depending upon whether the Examiner intends to modify AAPA by introducing only the horizontal row polarity inversion that causes the horizontal stripe problem addressed by Wolfs (e.g., see column 1 at lines 34-37), intends to introduce only the solution to that problem as described in Wolfs, or intends to introduce both the horizontal polarity inversion plus the remedy to that problem.

The Examiner seems to forget that Wolfs actually teaches a technique that <u>overcomes these horizontal stripes</u> described as being the problem addressed therein. Thus,

if anything, Wolfs teaches against using a horizontal-row-inversion technique, since Wolfs itself clearly teaches that such inversion creates horizontal stripes that must be overcome by further modification to incorporate the voltage level adjustment technique disclosed in Wolfs. Wolfs makes no suggestion to slant the flicker as the additional modification.

Appellant further points out that one key aspect and aim of the present invention is that of reducing flicker for non-white colors (e.g., monochromatic color images). As clearly shown in Figures 15A/15B, the first AAPA suffers from the problem of flicker causing vertical lines because the two polarities cause two different currents.

By slanting the flicker that would normally occur during monochromatic images, the flicker is reduced for the human visual system. This slanting is done by combining polarity reversal in a specific method in both the horizontal dimension and the vertical dimension. Neither the first AAPA nor Wolfs suggests the specific combination of polarity reversal of the independent claims, which combination allows the monochromatic color image flicker to be slanted.

A similar argument applies for the second AAPA shown in Figures 14A/14B, in that the superimposition of Wolfs onto this existing polarity reversal scheme would modify, if not totally destroy, the existing method of reducing flicker, as described beginning at line 28 of page 5. That is, the Examiner is understood as urging one of ordinary skill in the art to introduce the horizontal stripes described in Wolfs at lines 34-37 of column 1.

Thus, the combination of Wolfs into either the first AAPA or the second AAPA will modify or destroy the respective scheme that is already used to reduce flicker and would additionally introduce the horizontal stripes that Wolfs attempts to remove.

Therefore, Appellant submits that the prior art rejection clearly demonstrates improper hindsight, fails to provide a reasonable motivation to combine the cited references, and fails to properly and reasonably analyze the limitations of the claimed invention.

Second, the Examiner's position is flawed as a matter of fact.

As pointed out above, even if AAPA Figures 13A-14B were to be modified by

substituting the Wolfs' single row polarity inversion or double row polarity inversion, one would not achieve a slanted flicker. It would appear that the only way to achieve a slanted flicker in AAPA (using row polarity inversion of Wolfs) would be to selectively impose single row polarity inversion on the monochrome example shown in Figures 15A/15B. The rejection of record fails to explain how or why such modification to AAPA would or could be made, since Figure 15A/15B is a specific case of a monochrome display.

In view of the foregoing evaluation of the rejection of record, Appellant submits that the claimed invention, as defined by independent claims 1, 25, and 49, is fully patentable over the AAPA, in view of Wolfs.

Independent Claim 7

Independent claim 7 recites displaying a monochromatic color, using a reversing data signal defined during four consecutive scanning periods.

In addition to the discussion above for independent claims 1, 25, and 49, the following points are made.

First, Appellant submits that the rejection currently of record incorrectly attributes the discussion at lines 4-27 of page 5 for the AAPA as addressing a display of monochromatic color. Second, Appellant submits that, even if the paraphrasing of the AAPA that is contained in the rejection currently of record is correct, this is not what is being claimed. That is, the rejection currently of record simply ignores the plain meaning of the claim language.

Third, it is noted that the description of one of the problems addressed in the prior art, as discussed at line 8 of page 6 through line 25 of page 7, is directly related to display of monochromatic color other than white (e.g., the rationale for the specific terminology "monochromatic color" in the claim limitation). That is, as described in the above-referenced lines, the AAPA pixel width, combined with the flicker control technique used in that AAPA of alternating polarity as shown in Figures 13A and 13B to reduce flicker for white (e.g., see

line 27 of page 4 through line 3 of page 5), Appellant has recognized that flicker is still noticeable for monochromatic colors other than white. The solution offered by the present invention is to intentionally slant the flicker so that it is less noticeable by the human eye.

Neither AAPA nor Wolfs recognized the flicker as defined to be a problem for monochromatic colors.

Therefore, independent claim 7 is clearly patentable over AAPA and Wolfs.

Independent Claim 13

Independent claim 13 recites displaying shades of gray by using an intermediate potential that corresponds to an intermediate transmittance between the maximum transmittance and a minimum transmittance in combination with reversing the polarity of this potential every 2n units of scanning electrodes and for every signal electrode.

In addition to the discussion above concerning motivation to modify AAPA with Wolfs, Appellant submits that the description at lines 28-31 of column 4 clearly describes that the correction potential used in Wolfs is set at a "medium grey" potential.

It is noted that this is an entirely different concept from that involved in the present invention or described by claim 13. That is, it is one thing to simply describe the level of a potential as "being a medium grey", as in Wolfs. It is entirely different to describe a method of "displaying shades of gray", which is one of the specific problems addressed by the present invention.

Hence, Appellant submits that independent claim 11 is clearly patenable over AAPA and Wolfs.

Independent Claims 19 and 43

Independent claims 19 and 43 recite displaying gray-scale color of a monochromatic color by using a polarity reversing scheme in combination with four precisely-defined potentials during four consecutive scanning periods. The first potential is an intermediate

transmittance potential of positive polarity. The second potential is minimum transmittance potential of positive polarity. The third potential is intermediate transmittance potential of negative polarity, and the fourth is minimum transmittance potential of positive polarity.

In contrast, the description in the rejection currently of record, however accurate it might be for Wolfs, does not describe the claimed limitation. It is further noted that the waveform shown in Figure 6 of Wolfs is for <u>two</u> consecutive row scans (see line 36 of column 4). Therefore, even if four (or more) potentials are represented in Figure 6, and even if four of these potentials should coincide with the four potentials of the claim limitation, there would be no suggestion to use these four potentials in <u>four</u> consecutive scanning periods, even if the Examiner chooses to define a row scan as being a "scanning period".

Hence, Appellant submits that independent claims 19 and 43 would clearly be patentable over AAPA, even if Wolfs were to be somehow combinable.

<u>Independent Claim 31</u>

Independent claim 31 recites a polarity reversal scheme in combination with four potentials that is more generic than described in claims 19 and 43. However, the same comment above applies to this claim 31 as applies for claims 19 and 43, in that Wolfs addresses, at most, two consecutive periods, depending on how the term "scanning period" is being defined by the Examiner.

Hence, independent claim 31 is clearly patentable over AAPA, in view of Wolfs.

<u>Independent Claims 37 and 51</u>

Independent claims 37 and 51 recite a polarity reversal scheme that provides a slanted flicker, in combination with a potential corresponding to an intermediate transmittance. Figure 6 of Wolfs does not show a reversal of polarity of a single potential.

Therefore, independent claim 37 is clearly patentable over AAPA, in view of Wolfs.

Independent Claims 50 and 52

Independent claims 50 and 52 recite four consecutive scanning periods having four specifically defined potentials. As pointed out above for independent claims 19 and 43, Wolfs teaches, at most, two consecutive scanning periods, depending upon the Examiner's definition of "scanning period".

Hence, independent claims 50 and 52 are clearly patentable over AAPA, further in view of Wolfs.

Independent Claims 53 and 54

Independent claims 53 and 54 specifically recite slanted flicker. Since neither AAPA nor Wolfs teach, suggest, or even hint at, changing flicker from horizontal or vertical to be slanted, these claims are clearly patentable.

E. APPELLANT'S POSITION ON COMPLETENESS

Appellant submits that the rejection currently of record additionally fails to simply address the plain meaning of the language of limitations included in claims 7, 13, 19, 31, 37, 43, 50, 51, and 52. Therefore, these claims are clearly patentable over the prior art of record.

IX. CONCLUSION

In view of the foregoing, Appellant submits that claims 1-54, all the claims presently pending in the application, are clearly and patentably distinct form the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove all rejections of claims 1-54.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully submitted,

Dated: 3/30/04

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APPENDIX

1. (Previously presented) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

reversing a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes; and

reversing a polarity for every said signal electrode in said liquid crystal display and sequentially feeding each of said data signals having the reversed polarity to each of corresponding ones of said signal electrodes.

2. (Previously presented) The method for driving the liquid crystal display according to Claim 1, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent one of said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

3. (Previously presented) The method for driving the liquid crystal display according to Claim 1, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

4. (Previously presented) The method for driving the liquid crystal display according to Claim 1, wherein said liquid crystal display comprises four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

5. (Original claim) The method for driving the liquid crystal display according to Claim 1, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

6. (Previously presented) The method for driving the liquid crystal display according to Claim 1, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

7. (Previously presented) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying a monochromatic color by reversing a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a first polarity and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity, for every said signal electrode and by sequentially feeding

said data signal having the reversed polarity to each of corresponding said signal electrodes.

8. (Previously presented) The method for driving the liquid crystal display according to Claim 7, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

9. (Previously presented) The method for driving the liquid crystal display according to Claim 7, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

10. (Previously presented) The method for driving the liquid crystal display according to Claim 7, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

11. (Original claim) The method for driving the liquid crystal display according to Claim 7, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

12. (Previously presented) The method for driving the liquid crystal display according to Claim 7, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

13. (Previously presented) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying shades of gray by reversing a polarity of a data signal having a potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrodes in said liquid crystal display and for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes.

14. (Previously presented) The method for driving the liquid crystal display according to Claim 13, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

15. (Previously presented) The method for driving the liquid crystal display according to Claim 13, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are

arranged in a repeated manner in this order in a scanning direction and an arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

16. (Previously presented) The method for driving the liquid crystal display according to Claim 13, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

17. (Original claim) The method for driving the liquid crystal display according to Claim 13, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

18. (Previously presented) The method for driving the liquid crystal display according to Claim 13, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

19. (Previously presented) A method for driving a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said method comprising:

displaying gray-scale color of a monochromatic color by reversing a data signal for every said signal electrode and by sequentially feeding said data signal having the reversed

polarity to each of corresponding said signal electrodes, said reversing being relative to a common potential applied to one terminal of all said liquid crystal cells, said data signal comprising a waveform defined during four consecutive scanning periods, said data signal waveform comprising combinations of:

a first signal having a first potential of a positive polarity, said first potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell;

a second signal having a second potential of said positive polarity, said second potential corresponding to said minimum transmittance of said liquid crystal cell;

a third signal having a third potential of a negative polarity, said third potential corresponding to said intermediate transmittance between said maximum transmittance and said minimum transmittance of said liquid crystal cell; and

a fourth signal having a fourth potential of said negative polarity that corresponds to said minimum transmittance of said liquid crystal cell.

20. (Previously presented) The method for driving the liquid crystal display according to Claim 19, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three primary colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

21. (Previously presented) The method for driving the liquid crystal display according to Claim 19, wherein said liquid crystal display comprises a mosaic type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning

electrode.

22. (Previously presented) The method for driving the liquid crystal display according to Claim 19, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which color filters made up of red, green, and blue color filters and additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

23. (Original claim) The method for driving the liquid crystal display according to Claim 19, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up dot pixel portions having different colors is connected to one said signal electrode.

24. (Previously presented) The method for driving the liquid crystal display according to Claim 19, wherein said liquid crystal display comprises an active-matrix type and its switching element comprises a thin film transistor.

25. (Previously presented) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes and for every signal electrode in said liquid crystal display and to sequentially feed said each of said data signals having reversed polarity to each of corresponding said signal electrodes.

26. (Previously presented) The driving circuit for a liquid crystal display according to Claim 25, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from subsequent said scanning electrode and said liquid crystal display comprises a delta type in which dot pixel portions made up of three colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

27. (Previously presented) The driving circuit for a liquid crystal display according to Claim 25, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent one of said scanning electrode.

28. (Previously presented) The driving circuit for a liquid crystal display according to Claim 25, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

29. (Original claim) The driving circuit for a liquid crystal display according to Claim 25, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

30. (Previously presented) The driving circuit for a liquid crystal display according to Claim 25, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

31. (Previously presented) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a first polarity and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity, for said every signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

32. (Previously presented) The driving circuit for a liquid crystal display according to Claim 31, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode, and said liquid crystal display comprises a delta type in which dot pixel portions made up of three colors including red, green, and blue that make up one pixel portion are arranged in a triangular form.

33. (Previously presented) The driving circuit for a liquid crystal display according to Claim 31, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

34. (Previously presented) The driving circuit for a liquid crystal display according to Claim 31, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

35. (Original Claim) The driving circuit for a liquid crystal display according to Claim 31, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

36. (Previously presented) The driving circuit for a liquid crystal display according to Claim 31, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

37. (Previously presented) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a polarity of a data signal having a potential corresponding to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrode in said liquid crystal display and for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding signal electrodes.

38. (Previously presented) The driving circuit for a liquid crystal display according to Claim 37, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode and said liquid crystal display comprises a delta type in which dot pixel portions made up of three colors including red, green, and blue that makes up one pixel portion are arranged in a triangular form.

39. (Previously presented) The driving circuit for a liquid crystal display according to Claim 37, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

40. (Previously presented) The driving circuit for a liquid crystal display according to Claim 37, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

41. (Original claim) The driving circuit for a liquid crystal display according to Claim 37, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

42. (Previously presented) The driving circuit for a liquid crystal display according to Claim 37, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

43. (Previously presented) A driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit comprising:

a signal electrode driving circuit to reverse a data signal for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes, said reversing being relative to a common potential applied to one terminal of all said liquid crystal cells, said data signal comprising a waveform defined during four consecutive scanning periods, said data signal waveform comprising combinations of:

a first signal having a first potential of a positive polarity, said first potential corresponding to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell;

a second signal having a second potential of said positive polarity, said second potential corresponding to said minimum transmittance of said liquid crystal cell;

a third signal having a third potential of a negative polarity, said third potential corresponding to said intermediate transmittance between said maximum transmittance and said minimum transmittance of said liquid crystal cell; and

a fourth signal having a fourth potential of said negative polarity that corresponds to said minimum transmittance of said liquid crystal cell.

44. (Previously presented) The driving circuit for a liquid crystal display according to Claim 43, wherein a position of each of color filters for red, green, and blue each corresponding to each of said liquid crystal cells in said liquid crystal display is deviated by one half of a pitch from a subsequent said scanning electrode and said liquid crystal display comprises a delta

type in which dot pixel portions made up of three colors including red, green, and blue that make- up one pixel portion are arranged in a triangular form.

45. (Previously presented) The driving circuit for a liquid crystal display according to Claim 43, wherein said liquid crystal display comprises a mosaic-type in which three color filters for red, green, and blue each corresponding to each of said liquid crystal cell are arranged in a repeated manner in this order in a scanning direction and arrangement of said three color filters is deviated by one or two pitches from a subsequent said scanning electrode.

46. (Previously presented) The driving circuit for a liquid crystal display according to Claim 43, wherein said liquid crystal display comprises a four dot pixel portion arranged type in which said color filters made up of said red, green, and blue color filters and an additional any one color filter selected out of said red, green, and blue color filters are arranged in a quadrangular form.

47. (Original Claim) The driving circuit for a liquid crystal display according to Claim 43, wherein, in said liquid crystal display, a switching element used to drive said liquid crystal cell making up said dot pixel portion having different colors is connected to one said signal electrode.

48. (Previously presented) The driving circuit for a liquid crystal display according to Claim 43, wherein said liquid crystal display comprises an active-matrix type and its said switching element comprises a thin film transistor.

49. (Previously presented) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a

row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a polarity of each of said data signals for every 2n (n is a natural number) pieces of said scanning electrodes and for every signal electrode in said liquid crystal display and to sequentially feed said each of said data signals having reversed polarity to each of corresponding said signal electrodes.

50. (Previously presented) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a positive polarity and a second signal having a second potential of said positive polarity and into a first signal having a first potential of a negative polarity and a second signal having a second potential of said negative polarity, for said every signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

51. (Previously presented) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at

an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a polarity of a data signal having a potential corresponding to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell for every 2n (n is a natural number) pieces of said scanning electrode in said liquid crystal display and for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding signal electrodes.

52. (Previously presented) An image display device comprising:

a driving circuit for a liquid crystal display in which a liquid crystal cell is mounted at an intersection of each of a plurality of scanning electrodes placed at specified intervals in a row direction and each of a plurality of signal electrodes placed at specified intervals in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of said signal electrodes, said driving circuit including:

a signal electrode driving circuit to reverse a data signal made up, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, of combinations of a signal having a potential of a positive polarity that corresponds to an intermediate transmittance between a maximum transmittance and a minimum transmittance of said liquid crystal cell and of a signal having a potential of said positive polarity that corresponds to said minimum transmittance of said liquid crystal cell and of combinations of a signal having a potential of a negative polarity that corresponds to said intermediate transmittance between said maximum and minimum transmittance of

said liquid crystal cell and of a signal having a potential of said negative polarity that corresponds to said minimum transmittance of said liquid crystal cell, for every said signal electrode and to sequentially feed said data signal having the reversed polarity to each of corresponding said signal electrodes.

53. (Previously presented) A method of reducing flicker on a liquid crystal display, said method comprising:

reversing a polarity of first display signals related to a horizontal dimension in a first uniform interval; and

reversing a polarity of second display signals related to a vertical dimension in a second uniform interval,

wherein concurrent uniform reversals of polarity in both said horizontal dimension and said vertical dimension causes a flicker to be at an angle slanted relative to said horizontal dimension and said vertical dimension.

54. (Previously presented) A liquid crystal display, comprising:

a plurality of scanning electrodes placed at specified intervals in a row direction;

a plurality of signal electrodes placed at specified intervals in a column direction; and

a controller that reverses a polarity, in a first predetermined uniform interval, of display signals to said scanning electrodes and reverses a polarity, in a second predetermined uniform interval, of display signals to said signal electrodes,

a combination of uniform polarity reversals in both said scanning electrodes and said signal electrodes causing a flicker in said liquid crystal display to be at a slanted orientation relative to said scanning electrodes and said signal electrodes.